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| 09/877,314      | 06/08/2001  | Lothar Wenzel        | 5150-53101          | 9350             |

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09/18/2003

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EXAMINER

LAU, TUNG S

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 09/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/877,314

Applicant(s)

WENZEL ET AL.

Examiner

Tung S Lau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5,7,9-12,14,16-23,25 and 27-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36,37,40 and 41 is/are allowed.
- 6) ☒ Claim(s) 1,7,9-12,18-23,29-35,38,39,42 and 43 is/are rejected.
- 7) ☒ Claim(s) 3,5,6,14,16,17,25,27 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 22, 33, 34, 39 and 43 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for scanning an object in a dimension of a region greater than three, does not reasonably provide enablement for scan in that region. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to the invention commensurate in scope with these claims.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 12, 23, 35, 9, 10, 11, 19, 20, 21, 30, 31, 32 are rejected under 35

U.S.C. 102(b) as being anticipated by Hoogerhyde et al. (U.S. Patent 5,448,687).

Regarding claim 1:

Hoogerhyde discloses a method for scanning for an object within a region, comprising scanning the region using a conformal scanning scheme (Col. 2, Lines 34-68), said scanning comprising: performing a conformal mapping between a characteristic geometry of the region and a first scanning curve to generate a conformal scanning curve based on said characteristic geometry (Col. 2, Lines 34-68), wherein the first scanning curve is comprised in a first geometry, wherein the first geometry is different from the characteristic geometry of the region (Col. 3, Lines 1-45, fig. 3a-3d, abstract), wherein the first scanning curve comprises a sequence of points in the first geometry, and wherein said performing a conformal mapping between a characteristic geometry of the region and a first scanning curve comprises: determining a mapping function which maps each point in the first geometry to a corresponding point in the characteristic geometry (Col. 3, Lines 1-45, fig. 3a-3d); and applying the mapping function to each point in the sequence of points in the first geometry to generate a corresponding sequence of points in the characteristic geometry (Col. 3, Lines 1-45, fig. 3a-3d), wherein the sequence of points in the characteristic geometry comprises the conformal scanning curve; and measuring the region at a plurality of points along the conformal scanning curve using one or more sensors (fig. 1, unit 38); determining one or more characteristics of the object in response to said scanning; and generating output indicating the one or more characteristics of the object (Col. 3, Lines 1-45, fig. 3a-3d).

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Regarding claim 12:

Hoogerhyde discloses a method for scanning for an object within a region, including a sensor (fig. 1, unit 38) and a computer which is operable to couple to said sensor (fig. 1, unit 34), said computer comprising: a CPU; and a memory medium which is operable to store a scanning program (fig. 1, unit 34); wherein said CPU is operable to execute said scanning program to perform (fig. 1, unit 34): scanning the region with said sensor using a conformal scanning scheme, said scanning comprising scanning the region using a conformal scanning scheme (Col. 2, Lines 34-68), said scanning comprising: performing a conformal mapping between a characteristic geometry of the region and a first scanning curve to generate a conformal scanning curve based on said characteristic geometry (Col. 2, Lines 34-68), wherein the first scanning curve is comprised in a first geometry, wherein the first geometry is different from the characteristic geometry of the region (Col. 3, Lines 1-45, fig. 3a-3d, abstract), wherein the first scanning curve comprises a sequence of points in the first geometry, and wherein said performing a conformal mapping between a characteristic geometry of the region and a first scanning curve comprises: determining a mapping function which maps each point in the first geometry to a corresponding point in the characteristic geometry (Col. 3, Lines 1-45, fig. 3a-3d); and applying the mapping function to each point in the sequence of points in the first geometry to generate a corresponding sequence of points in the characteristic geometry (Col. 3, Lines 1-45, fig. 3a-3d), wherein the sequence of

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points in the characteristic geometry comprises the conformal scanning curve; and measuring the region at a plurality of points along the conformal scanning curve using one or more sensors (fig. 1, unit 38); determining one or more characteristics of the object in response to said scanning; and generating output indicating the one or more characteristics of the object (Col. 3, Lines 1-45, fig. 3a-3d).

Regarding claim 23:

Hoogerhyde discloses a memory medium containing program instructions to scan for an object within a region, wherein said program instructions are executable to perform: scanning the region using a conformal scanning scheme, said scanning comprising: performing a conformal mapping between a characteristic geometry of the region and a first scanning curve to generate a conformal scanning curve based on said characteristic geometry (Col. 2, Lines 34-68), wherein the first scanning curve is comprised in a first geometry, wherein the first geometry is different from the characteristic geometry of the region (Col. 3, Lines 1-45, fig. 3a-3d, abstract), wherein the first scanning curve comprises a sequence of points in the first geometry, and wherein said performing a conformal mapping between a characteristic geometry of the region and a first scanning curve comprises: determining a mapping function which maps each point in the first geometry to a corresponding point in the characteristic geometry (Col. 3, Lines 1-45, fig. 3a-3d); and applying the mapping function to each point in the sequence of points in the first geometry to generate a corresponding

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sequence of points in the characteristic geometry (Col. 3, Lines 1-45, fig. 3a-3d), wherein the sequence of points in the characteristic geometry comprises the conformal scanning curve; and measuring the region at a plurality of points along the conformal scanning curve using one or more sensors (fig. 1, unit 38); determining one or more characteristics of the object in response to said scanning; and generating output indicating the one or more characteristics of the object (Col. 3, Lines 1-45, fig. 3a-3d).

Regarding claim 35:

Hoogerhyde discloses a method for scanning for an object within a region, comprising: performing a conformal mapping between a characteristic geometry of the region and a first scanning curve to generate a conformal scanning curve based on said characteristic geometry (Col. 2, Lines 34-68), wherein the first scanning curve is comprised in a first geometry, wherein the first geometry is different from the characteristic geometry of the region (Col. 3, Lines 1-45, fig. 3a-3d, abstract); and measuring one or more attributes of the region at a plurality of points along the conformal scanning curve using one or more sensors (Col. 3, Lines 1-45, fig. 3a-3d, fig. 1, unit 38); determining one, or more characteristics of the object in response to said measuring (Col. 3, Lines 1-45, fig. 3a-3d); and generating output indicating the one or more characteristics of the object (Col. 3, Lines 1-45, fig. 3a-3d, fig. 1, unit 44).

Regarding claims 9, 10, 11, 19, 20, 21, 30, 31, 32:

Hoogerhyde discloses measuring the region at a plurality of points along the conformal scanning curve produces data; wherein said determining one or more characteristics of the object in response to said scanning comprises, examining said data (Col. 2, Lines 34-68); scanning the region using the conformal scanning scheme produces data indicative of the one or more characteristics of the object; and wherein said determining one or more characteristics of the object in response to said scanning comprises examining said data (Col. 2, Lines 34-68); the dimension of the region is one, two and three (abstract);

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

a. Claims 7, 18, 29, 38 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Hoogerhyde et al. (U.S. Patent 5,448,687).

Regarding claims 38 and 42:

Hoogerhyde discloses a method and a program in a memory medium for scanning for an object within a region, comprising scanning the region using a conformal scanning scheme (Col. 2, Lines 34-68), said scanning comprising



performing a conformal mapping between a characteristic geometry of the region and a first scanning curve to generate a conformal scanning curve based on said characteristic geometry (abstract), and measuring the region at a plurality of points along the conformal scanning curve; determining one or more characteristics of the object in response to said scanning; and generating output indicating the one or more characteristics of the object wherein the first scanning curve is an optimum scanning curve for a first geometry (Col. 3, Lines 1-45).

Hoogerhyde does not disclose the use of an optimum scanning; but it would have been obvious to one having ordinary skill in the art at the time the invention was made to use of an optimum scanning, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re A11er, 105 USPQ 233.

Regarding claims 7, 18, 29:

Hoogerhyde discloses the claimed invention except for scanning in the optimum region. It would have been obvious to one having ordinary skill in the art at the time the invention was made to-, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

***Allowable Subject Matter***

4. Claims 36, 37, 40, 41 are allowed.

***Reasons for Allowance***

5. The following is an examiner's statement of reasons for allowance:

Independent claims 36, 37, 40 and 41 contain allowable subject matter. None of the prior art of record shows or fairly suggests the claimed invention.

Regarding claims 36 and 40:

The primary reason for the allowance of claims 36 and 40 are the inclusion of the method for scanning an object within a region including minimizes one or more angle deviations and curvature. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Regarding claims 37 and 41:

The primary reason for the allowance of claims 37 and 41 are the inclusion of the method for scanning an object within a region including maximum curvature below a specified curvature value. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Claim Objections***

6. Claims 3, 5, 6, 14, 16, 17, 25, 27, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach the method, a execute program by a CPU, a system, a memory medium of determining the characteristic geometry of the region prior to said generating the conformal scanning curve; The first scanning curve minimizes one or more of angle deviations and curvature; The conformal curve has a maximum curvature below a specified curvature value.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309.

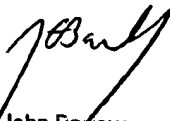
The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TC2800 FAX Telephone Numbers: 703-872-9306

TC2800 Customer Service FAX - (703) 872-9317

  
John Barlow  
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